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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/655,904

09/05/2003

James D. Parsons

378-21-034

7685

23935

7590

12/01/2005

KOPPEL, JACOBS, PATRICK & HEYBL  
555 ST. CHARLES DRIVE  
SUITE 107  
THOUSAND OAKS, CA 91360

EXAMINER

GABOR, OTILIA

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-2

<b>Office Action Summary</b>	<b>Application No.</b> 10/655,904	<b>Applicant(s)</b> PARSONS, JAMES D.	
	<b>Examiner</b> Otilia Gabor	<b>Art Unit</b> 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-26 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-21 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Appeal Brief***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (U. S. Patent 5,025,243).

Ichikawa discloses an electromagnetic radiation detection system and method (Fig.1A) comprising a body F of SiC (see Col.1, lines 49-50) at least 200 micrometer thick (see Col.1, line 64) and a detector (including electrodes A) arranged to detect infrared radiation absorption by the SiC body F (see Col.3, lines 43-64) and to detect changes in the resistance of the SiC body F in response to the body receiving radiation having a wavelength less than about 10 micrometers (see Col.3, lines 48-49). Ichikawa fails to specifically disclose that the radiation has a wavelength of less than 10 micrometers, however it would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize that infrared radiation of the type irradiated to the body F in the system of Ichikawa is fairly described as radiation having a wavelength less than about 10 micrometers since the range covers the wavelength ranges described as "near" and "intermediate" infrared. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the detector in the system disclosed by Ichikawa was arranged to detect physico-chemical

processes inside the body F which serve to explain the response of the body F to radiation. Ichikawa fails to specifically disclose that the thickness of the SiC body is at least 400 micrometers, and that it is in the range of between 400-2000 micrometers (claims 3, 11, 16), however using a thicker body would have been obvious to one having ordinary skill in the art since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)), and discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955)) especially given that a higher thickness for the SiC body does not improve the absorption but merely changes its size. Additionally, since Ichikawa does not disclose that the thickness of the body F changes throughout or that its surface roughness changes, it is assumed that the body F has uniform thickness and a flat surface.

Regarding claims 7, 8, 18 Ichikawa does not disclose any protrusions and/or surface irregularities in the SiC body and therefore, it is considered to be flat (no protrusions) and having a uniform thickness (uniform thickness and flatness of surface is present even if the filament is cylindrical).

Regarding claims 2, 10, 15, 20 Ichikawa discloses that the detector system detects infrared radiation absorption by the SiC body F (see Col.1, lines 54-58).

Regarding claims 4, 12, 17, 21 Ichikawa discloses that the detector system detects increases in the resistance of the SiC body F in response to the radiation because increases are a part of the changes described in Col.1, lines 54-58.

Regarding claims 5, 13 Ichikawa places no limitation on the infrared radiation which irradiates the SiC body F and therefore it would have been obvious to one having ordinary skill in the art to retain the features described at Col.1, lines 14-18 and implement the system for a broad band of wavelengths or a narrow band of wavelengths creating the arrangement of a filter. A filter to limit reception of specific radiation is a routine approach in this field.

### ***Allowable Subject Matter***

3. Claims 22-26 are allowed.
4. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: The prior art cited fails to disclose a single crystal SiC structure as claimed.

### ***Response to Arguments***

6. Applicant's arguments filed 05/25/2005 have been fully considered but they are not persuasive. The argument that the reference does not disclose the claimed less than 10 micrometer wavelength is not persuasive because, as clearly stated in the rejection, the reference discloses a SiC body that is responsive to "infrared" radiation, which is a spectrum that inherently includes the "near" and the "intermediate" IR range and thus it includes the 0.7-8 micrometer range. Thus, the SiC is responsive to

wavelengths that are above but also to wavelengths that are in the range that is below the claimed 10 micrometer range. The argument that the reference is not irradiated with light of wavelength less than 10 micrometers is not persuasive since the claims (claims 9, 14, 19) do not claim "only" radiation that is less than 10 micrometers and thus any radiation that includes a range that is less than 10 micrometers overcomes this limitation. The argument that the reference does not disclose the claimed 400 micrometer thick SiC body is not persuasive, because the reference does include a thickness of 200 micrometers, which is enough to create acoustic absorption in the body. If this is not so then the present application which discloses a range of "at least 200 micrometers" would not be enabled to create acoustic absorption in the SiC body either (see page 3, lines 8-10 of the specification).

### ***Conclusion***

**7. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Otilia Gabor  
Primary Examiner  
Art Unit 2884



**OTILIA GABOR**  
**PRIMARY EXAMINER**